

Solar Collector Factsheet: SPF-Nr. C632



Model	AP-20
Type	Tube collector
Manufacturer	Focus Technology Co., Ltd
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Sales area	CH,EU,US,CA,AU,ME,NZ

- Performance test EN 12975
- Quality test EN 12975

Dimensions

Total length	1.929 m
Total width	1.496 m
Empty weight with glass	63 kg
Liquid content	0.58 l
Aperture area	1.876 m ²
Absorber area	1.606 m ²
Gross area	2.886 m ²

Technical data

Minimum volume flow rate	120 l/h
Recommended volume flow rate	120 l/h
Maximum volume flow rate	600 l/h
Maximum operating pressure	6 bar
Maximum operating temperature	250 °C
Stagnation temperature	245 °C

(T_a = 30°C, G = 1000 W/m²)

Types of mounting

- Construction for flat roof
- Integration into sloped roof
- Construction for sloping roof
- Front mounting

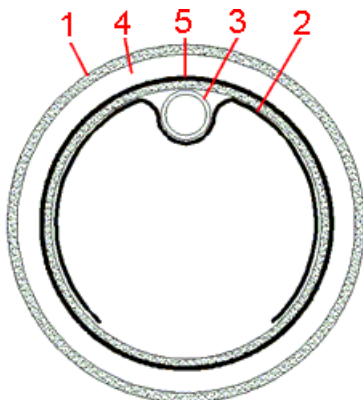
Further data

- Variable module size
- Glazing replaceable

Hydraulic connections

Copper pipe, nominal diameter 22 mm

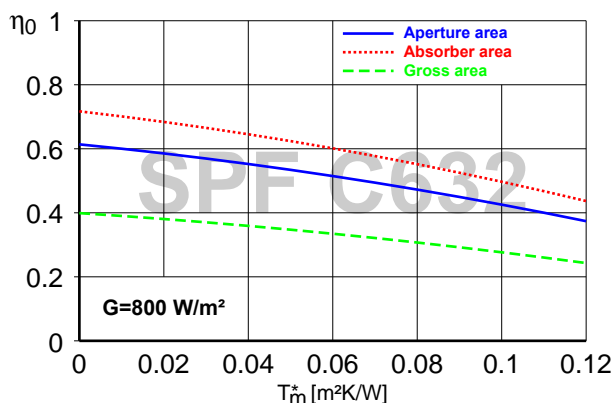
Construction



Element list and Nomenclature

- 1 Glazing
- 2 Heat-conducting metal sheet
- 3 Heat pipe
- 4 Vacuum
- 5 Absorber

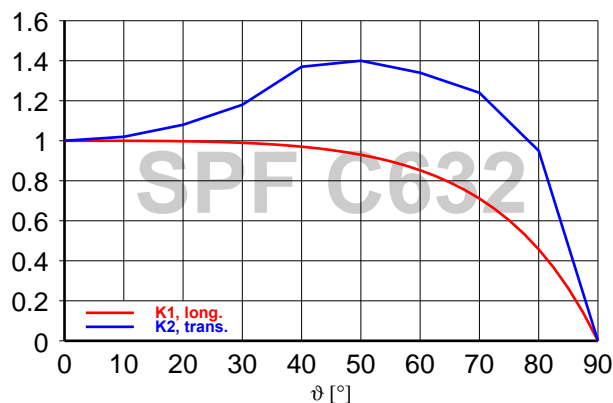
Efficiency curve



Reference area	Aperture	Absorber	Gross
η_0	0.614	0.717	0.399
a_1 [W/(m²K)]	1.30	1.52	0.85
a_2 [W/(m²K²)]	0.0073	0.0085	0.0047
Test fluid: water-glycol 33.3%, volume current: 120 l/h			

Angle factors

(Incident Angle Modifier)



K1, longitudinal (50°)	0.93
K2, transversal (50°)	1.40
(special IAM)	
Heat capacity: C	265 kJ/K

System

(Climate: central Switzerland, collector orientation: south, cold water 10°C, hot water 50°C)

Short description of the system (simulation with Polysun)

Domestic hot water F_{ss} = 60% (*)

Tank 450 l, collector inclination 45°
Daily energy demand 10 kWh (4-6 persons)
Energy demand of the reference system 4'200 kWh/year

Surface demand**

5.64 m²

Solar yield**

459 kWh/m²

Water pre-heating F_{ss} = 25% (*)

2 tanks 1'500 l + 2'500 l, collector inclination 30°
Domestic hot water 10'000 l/day (200 persons)
Daily heat losses (circulation & tank) 60 kWh
Energy demand of the reference system 191'700 kWh/year

65.1 m²

738 kWh/m²

Space heating F_{ss} = 25% (*)

Combined storage 1'200 l, collector inclination 45°
Daily energy demand 10 kWh (4-6 persons)
Building 200 m², moderately heavy construction, well insulated
Heating power demand 5.8 kW (outdoor temperature -8°C)
Energy demand space heating 12'140 kWh/year
Energy demand of the reference system 16'340 kWh/year

22.8 m²

241 kWh/m²

*) "Fractional solar savings": Proportion of the final energy that, thanks to the solar system, can be saved compared to a reference system.

**) Surface demand and solar yield are given with respect to the aperture area.